



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,355	08/16/2006	Andreas Gunther	2400.0200000/SRL	2719
26111 7590 04/27/2009 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
EXAMINER				
OH, TAYLOR V				
ART UNIT		PAPER NUMBER		
1625				
MAIL DATE		DELIVERY MODE		
04/27/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/568,355

Applicant(s)

GUNTHER ET AL.

Examiner

Taylor Victor Oh

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Applicant's arguments with respect to claims 1-5 and 7-9 have been considered but are moot in view of the new ground(s) of rejection.

The Status of Claims :

Claims 1-5 and 7-9 are pending.

Claims 1-5 and 7-9 are rejected.

DETAILED ACTION

1. Claims 1-6 are under consideration in this Office Action.

Priority

2. It is noted that this application is a 371 of PCT/EP04/09117 (08/13/2004), which has a foreign priority document, Germany 10337885.5 (08/18/2003), which is not in the file. .

Drawings

3. None.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm et al (US 5,391, 811) in view of Thorsten et al (translated version of WO/0216304).

Bohm et al. discloses the followings (see abstract page):

α -fluoro- β -dicarbonyl compounds are prepared by reacting a halogenated dicarbonyl compound at temperatures of 20° to 100° C. with an addition product of hydrogen fluoride and a trialkylamine. This process is easy to carry out in technical terms and can also be carried out on a large scale.

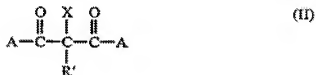
A process for the preparation of α -fluoro- β -dicarbonyl compounds of formula (I):



in which

the two radicals A can be identical or different and are each alkyl, aryl, alkoxy, aryloxy or an amino group and

R is hydrogen, fluorine, alkyl or aryl, has now been found which is characterised in that a dicarbonyl compound of formula (II):



in which

60

X is chlorine, bromine or iodine,

A is as defined for formula (I) and

R' is as defined for R in formula (I) and can additionally be chlorine, bromine or iodine, is reacted at temperatures of 20° C. to 100° C. with an addition product of hydrogen fluoride and a trialkylamine. 65

If R' in the starting material of formula (II) is chlorine, bromine or iodine, an α,α -difluoro- β -dicarbonyl compound is obtained, i.e. a compound of formula (I) in which R is fluorine.

(see col. 1, line 39 to col. 2, line 2).

Examples of addition products of hydrogen fluoride and trialkylamines can be those containing 1 to 2.8 mol of hydrogen fluoride per mol of trialkylamine. This ratio is preferably 1:1.5 to 2.5 and particularly preferably 1:1.8 to 2.2.

Addition products of 3 mol of hydrogen fluoride and 1 mol of trialkylamine are often readily accessible and can be used to prepare addition products with a lower hydrogen fluoride content, even in situ, by adding the appropriate amount of free trialkylamine.

Addition products of hydrogen fluoride and trialkylamine can be used in amounts of 1 to 4 mol, for example, based on dicarbonyl compounds of formula (II). It is preferable to use 1 to 3 mol of addition product per mol of dicarbonyl compound of formula (II).

(see col. 3, lines 36-57).

However, the instant invention differs from the prior art in that the claimed reaction temperature range is different from the prior art temperature.

Thorsten et al. discloses the followings (see abstract page):

The invention relates to a novel, advantageous method for producing alpha fluoromalonic acid dialkyl esters of general formula (I) by reacting a compound of general formula (II) with an addition product of hydrogen fluoride and a trialkylamine, under pressure and at temperatures ranging from 103 DEG C to 130 DEG C. In formulae (I) and (2), R<1>1<1> represents alkoxy having 1 to 6 carbon atoms, R<1>2<1> represents hydrogen or fluorine, and R<1>3<1> represents hydrogen, fluorine or chlorine. The invention relates to a novel, advantageous method for producing alpha fluoromalonic acid dialkyl esters of general formula (I) by reacting a compound of general formula (II) with an addition product of hydrogen fluoride and a trialkylamine, under pressure and at temperatures ranging from 103 DEG C to 130 DEG C. In formulae (I) and (2), R<1>1<1> represents alkoxy having 1 to 6 carbon atoms, R<1>2<1> represents hydrogen or fluorine, and R<1>3<1> represents hydrogen, fluorine or chlorine.



The reaction temperatures can be varied at the time of the execution of the procedure according to invention within a larger range. Generally one works at temperatures preferentially from 103 C to 130 C, preferably at temperatures from 104 C to 110 C, particularly at temperatures from 104 C to 107 C.

The procedure according to invention is accomplished generally under increased pressure (self-pressure). Generally one works at pressures from 1,3 to 9 bar, preferentially at pressures from 1,3 to 4 bar.

(see page 2, 4th paragraph)

The procedure according to invention exhibits a set of advantages. Thus alpha fluoromalonic acid dialkyl esters are already received after half of the response time, which is usual with well-known procedures. In the procedure according to invention the response time amounts to 12 hours during with well-known procedures 24 to 72 hours of response time is necessary (see. DE-A 42 37 892). A further advantage are the yields higher compared with conventional procedures around at least 15%. Therefore the new procedure is in particular suitable for industrial application well.

The Dicarboxylverbindungen of the general formula (II) and all other parent compounds are usual commercial products or can by simple procedures of these be made.

Used for the execution of the procedure according to invention generally accumulation products of hydrogen fluoride because of tri alkyl amines, which per mol tri alkyl amine 1 to 3 mole hydrogen fluoride contain, preferably is this relationship with 1: 1 to 2, particularly prefers with 1: 1.

(see page 1, 9 and 11 paragraphs).

Bohm et al expressly discloses the method for preparing dialkyl alpha fluoromalonates by reacting dialkyl chloromalonnate with hydrogen fluoride and triethylamine at a temperature range from 20 to 100⁰ C at a reaction time of 72 hours; similarly, Thorsten et al does teach the method for preparing dialkyl

alpha-fluoromalonates by reacting dialkyl chloromalonate with hydrogen fluoride and triethylamine at a temperature range from 103 to 130⁰ C at a reaction time of 12 hours.

Therefore, it would have been obvious to the skilled artisan in the art to be motivated to incorporate Thorsten's et al teaching of using the high temperature with the short reaction time into the Bohm et al process in order to increase the yield of the desired product. This is because the skilled artisan in the art would expect such a manipulation to be feasible and successful as guidance shown in the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Taylor Victor Oh, MSD,LAC
Primary Examiner
Art Unit: 1625

/Taylor Victor Oh/

Primary Examiner, Art Unit 1625

4/23/09